

REMARKS

Initially, Applicants would like to express appreciation to the Examiner for the detailed Official Action provided and for the acknowledgment of Applicant's Claim for Priority and receipt of the certified copy of the priority document. Applicants also note that the Examiner has not indicated that the drawings have been approved by the Official Draftsperson on a Form PTO-948. The Examiner is thus requested to indicate that Applicant's drawings are acceptable in the next Official Action.

Applicants also note that the Examiner has not acknowledged receipt of the Information Disclosure Statement filed on December 23, 2003. Although Applicants presume that the Examiner has reviewed the Information Disclosure Statement and the documents cited therein, the Examiner is requested to acknowledge Applicant's Information Disclosure Statement in the next Official Action.

Upon entry of the above amendment, claims 1 and 6 will have been amended and claim 7 will have been canceled. Accordingly, claims 1-6 and 8-20 are currently pending. Applicants respectfully request reconsideration of the outstanding rejections and allowance of claims 1-6 and 8-20 in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

The Examiner has rejected claims 1-3, 11, 12, and 15-20 under 35 U.S.C. § 103(a) as being unpatentable over MAEDA (U.S. Patent No. 5,816,065) in view of MAEDA (U.S.

Patent No. 6,199,394) and further in view of YOHO et al. (U.S. Patent No. 5,353,606) or DINNAGE et al. (U.S. Patent No. 6,557,365). The Examiner takes the position that the MAEDA '065 patent discloses an air conditioning system including a suction fan 102, inlet 124, discharge fan 140, and desiccant wheel 103, but fails to show the regenerating heat exchanger and the duct arrangement. The Examiner contends that it would have been obvious to provide the MAEDA '065 apparatus with the claimed duct arrangement as a matter of design choice. The Examiner further contends that it would have been obvious to provide the MAEDA '065 apparatus with the regenerating heat exchanger of MAEDA '394 and the air handling of YOHO et al. or DINNAGE et al.

Although Applicants do not necessarily agree with the Examiner's rejection of claim 1 on this ground, nevertheless, Applicants have amended independent claim 1 to clearly obviate the above noted ground of rejection in order to expedite prosecution of the present application. In this regard, Applicants note that MAEDA '065, MAEDA '394, YOHO et al., and DINNAGE et al. fail to teach or suggest the subject matter claimed in amended claim 1. In particular, claim 1, as amended, sets forth an air conditioning system including a desiccant wheel, inter alia, "the desiccant wheel comprising: a shaft supported on an edge of the opening; and a plurality of blades extending from the shaft in a radial direction and each having a predetermined width, the blades provided with a plurality of air through holes". Support for the above amendment can be found at least in the specification in paragraphs

[0042] - [0043] and in figure 3. In Applicants' claimed invention, the desiccant wheel includes blades, with each blade having a plurality of air through holes therein. As shown particularly in figure 3, each blade extends radially from a central shaft and each blade has a predetermined width. Additionally, the direction of air flow passing through the blades is substantially perpendicular to the direction of the air through holes in the blades. In Applicants' invention, when the blades rotate with the shaft, the air flow passing between the blades enters the air through holes. Therefore, even if the desiccant wheel is rotating at a high speed, air flow obstruction is reduced due to the air flow entering through the air through holes. Additionally, the air through holes increase the contact area between the flowing air and the surface of the desiccant wheel, thereby improving the dehumidifying efficiency and performance. Accordingly, the configuration of Applicants' desiccant wheel with blades and air through holes prevents airflow disturbance along the discharge and intake passages, and improves dehumidifying efficiency and performance.

The MAEDA '394 patent, the YOHO et al. patent, and the DINNAGE et al. patent disclose air conditioning systems. However, neither MAEDA '394, YOHO et al., nor DINNAGE et al. teaches or suggests a desiccant wheel including “a shaft supported on an edge of the opening; and a plurality of blades extending from the shaft in a radial direction and each having a predetermined width, the blades provided with a plurality of air through holes”, as recited in claim 1, as amended. Therefore, the MAEDA '394 patent, the YOHO

et al. patent, and the DINNAGE et al. patent fail to cure the deficiencies of the MAEDA '065 device, and even assuming, arguendo, that the teachings of MAEDA '065, MAEDA '394, YOHO et al., and DINNAGE et al. have been properly combined, Applicants' claimed air conditioning system would not have resulted from the combined teachings thereof.

Further, there is nothing in the cited prior art that would lead one of ordinary skill in the art to make the modification suggested by the Examiner in the rejection of claim 1 under 35 U.S.C. § 103(a) over MAEDA '065 in view of MAEDA '394, and further in view of YOHO et al. or DINNAGE et al. Thus, the only reason to combine the teachings of MAEDA '065, MAEDA '394, YOHO et al., and DINNAGE et al. results from a review of Applicants' disclosure and the application of impermissible hindsight. Accordingly, the rejection of claim 1 under 35 U.S.C. § 103(a) over MAEDA '065 in view of MAEDA '394, and further in view of YOHO et al. or DINNAGE et al. is improper for all the above reasons and withdrawal thereof is respectfully requested.

Applicants submit that dependent claims 2-5 and 10-20, , which are at least patentable due to their dependency from claim 1 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record based on the additionally recited features.

The Examiner has rejected claims 6, 8, and 9 under MAEDA '065 in view of MAEDA '394, and further in view of YOHO et al. or DINNAGE et al., and further in view of COLVIN et al. (U.S. Patent No. 3,619,987).

Applicants note that MAEDA '065, MAEDA '394, YOHO et al., and DINNAGE et al. fail to teach or suggest the subject matter claimed, including, inter alia, a desiccant wheel, “a shaft supported on an edge of the opening; and a plurality of blades extending from the shaft in a radial direction and each having a predetermined width, the blades provided with a plurality of air through holes, as set forth in amended independent claim 1, as described above. Further, COLVIN et al. discloses a system including a desiccant wheel having a blade, but fails to teach or suggest any through holes in the blade of the desiccant wheel. Accordingly, COLVIN et al. fails to cure the deficiencies of MAEDA '065, MAEDA '394, YOHO et al., and DINNAGE et al. Moreover, there is nothing in the cited prior art that would lead one of ordinary skill in the art to make the modification suggested by the Examiner in the rejection of claims 6, 8, and 9 under 35 U.S.C. § 103(a) over MAEDA '065 in view of MAEDA '394, and further in view of YOHO et al. or DINNAGE et al., and further in view of COLVIN et al. Thus, the only reason to combine the teachings of MAEDA '065, MAEDA '394, YOHO et al., DINNAGE et al., and COLVIN et al. results from a review of Applicants' disclosure and the application of impermissible hindsight. Even if the teachings of MAEDA '065, MAEDA '394, YOHO et al., DINNAGE et al., and

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COLVIN et al. were combined, as suggested by the Examiner, the claimed combination would not result. Accordingly, the rejection of claims 6, 8, and 9 under 35 U.S.C. § 103(a) over MAEDA '065 in view of MAEDA '394, and further in view of YOHO et al. or DINNAGE et al., and further in view of COLVIN et al is improper for all the above reasons and withdrawal thereof is respectfully requested.

The Examiner has provisionally rejected claims 1-20 under the “nonstatutory doctrine” of obviousness type double patenting over claims 1-33 of copending U.S. Application No. 10/668,162. Although Applicants do not necessarily agree with the rejection of claims 1-20 on this ground, nevertheless, Applicants have submitted herewith a Terminal Disclaimer in order to expedite prosecution of the present application. Accordingly, it is believed that the provisional rejection of claims 1-20 under the “nonstatutory doctrine” of double patenting is now moot.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections, and an early indication of the allowance of claims 1-6 and 8-20.

SUMMARY AND CONCLUSION

In view of the foregoing, it is submitted that the present amendment is proper and that none of the references of record, considered alone or in any proper combination thereof, anticipate or render obvious Applicants' invention as recited in claims 1-6 and 8-20. The

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applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.


Accordingly, consideration of the present amendment, reconsideration of the outstanding Official Action, and allowance of the present amendment and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so.

Applicants note that this amendment is being made to advance prosecution of the application to allowance, and should not be considered as surrendering equivalents of the territory between the claims prior to the present amendment and the amended claims.

Should there be any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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